

II. Remarks

Reconsideration and re-examination of this application in view of the above amendments and the following remarks is herein respectfully requested.

Claims 1-42, and 49 have been withdrawn. Claims 52 and 55 have been cancelled. Claims 43 and 50 have been amended and claims 56 and 57 have been added. Accordingly, claims 43-48, 50, 51, 53, 54, 56, and 57 remain pending.

Claim Rejections - 35 U.S.C. §103(a)

Claims 43-48 and 50-55 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,342,932 B1 to Terao et al. (Terao) in view of U.S. Patent No. 5,751,388 to Larson (Larson).

The present invention in claim 43 provides for "a first polarization scrambling material located along the light pipe opposite the liquid crystal display." If the light matches the polarization of the reflective polarizer, the light passes through the reflective polarizer to illuminate the LCD. Alternatively, if the light does not match the polarization of the reflective polarizer, the light reflects back towards the diffuser and light extracting surface. The diffuser and the scrambling material under the light extracting surface scramble the polarization of the light and redirect the light back towards the reflective polarizer and ultimately the LCD. As such, the reflective polarizer increases the amount of light eventually used to backlight the LCD.

Larson teaches a method of changing the polarization by using a quarter wave retarder (Fig. 4, 108) and the other optical "elements 102, 104, 105 and 107 are all selected so as to be non-depolarizing" (Col. 10, lines 11-12). Furthermore, Larson teaches and requires a mirror 105 which "Upon reflection by 105, the circular handedness of the polarization is reversed" (Col. 10, lines 15-16) and not scrambled per the present application which does not use a quarter wave retarder in the system. Therefore the systems are fundamentally different in that Larson converts the reflected light in the wrong polarization to the correct polarization via a quarter wave retarder and non-depolarized optical elements, whereas the present application takes the polarized light in the incorrect orientation and randomly scrambles it such that the light can be reused on the next pass through the reflective polarizer.

Further, claims 44-48, 50, 51, and 52-54 depend directly or indirectly from claim 43 and are, therefore, patentable for at least the same reasons given above in support of claim 43. Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. §103(a).

New Claims

Claim 56 provides that "the white light emitting diode is located along the perimeter of the circuit board." In Terao, the LED is not placed at the perimeter of the board (20), but rather the board extends to the left of the LED as shown by the curved continuation line notation. This position is further supported by Terao,

Figure 1, which shows the LEDs not at the perimeter of the board. Furthermore as stated in Terao, column 4, lines 43-44, "FIG 3 is a section view of the device for attaching and connecting a liquid crystal display unit of FIG. 1, and taken along the direction B." Therefore since Fig. 3 is a cross section of Fig. 1 and since Fig. 1 shows the LEDs not at the board perimeter, Terao does not teach or suggest locating the LEDs at the perimeter of the circuit board.

Claim 57 provides that "the white light emitting diode is mounted on the flexible circuit board." Terao does not teach that circuit board (20) comprises a flexible board (12). Per Fig. 3, the flexible circuit board is connected to the LCD (ref. Column 4, lines 65-67) and then through conductor-embedded elastic members (30) is connected to the hard circuit board to which the LEDs are attached (ref column 4, lines 45-47). Note that the connection (30) is caused when the elastomeric connector is compressed between the flexible board (12) and the rigid board (30) which are separate elements. The LEDs of Terao are connected to the rigid board and not to the flexible board. Therefore, Terao does not teach or suggest all of the limitations of claim 57.

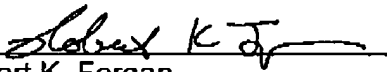
Conclusion

In view of the above amendments and remarks, it is respectfully submitted that the present form of the claims are patentably distinguishable over the art of

record and that this application is now in condition for allowance. Such action is respectfully requested.

Respectfully submitted by,

Dated: 6/14/2004


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